FN-137(R)
1110.0

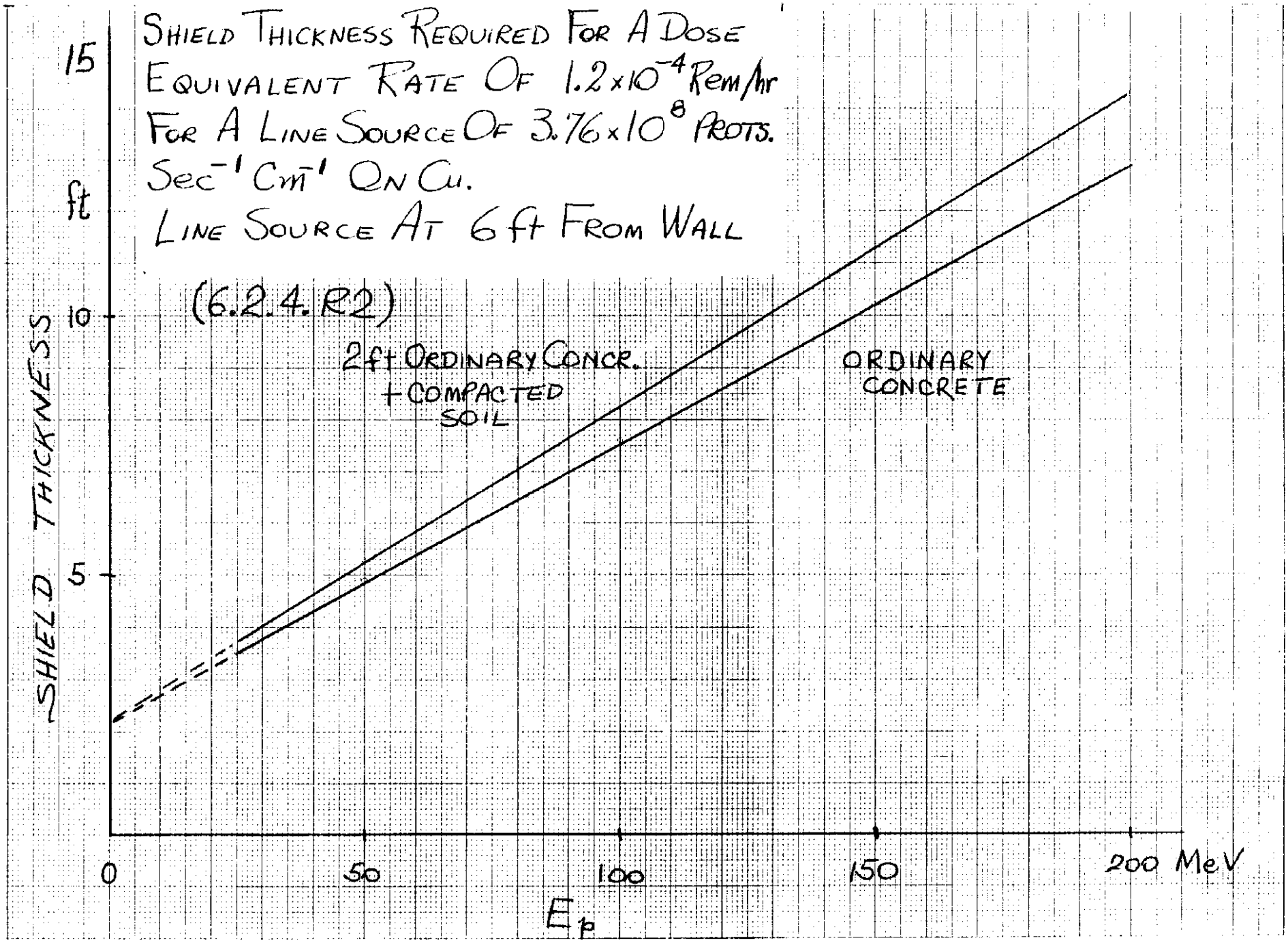
LINAC SHIELDING II

M. Awschalom

May 16, 1968

This is an updating and correction to FN-129 (April 2, 1968). Since April 4, 1968, an event took place which required redrawing curve (6.2.4) of FN-129.

K. O'Brien (H.A.S.L.) and R. G. Alsmiller (ORNL) made a careful comparative study of two independent neutron shielding calculations. This consisted in the solution of a well defined problem. Their answers agreed within 20% (This is vague but I do not yet have more details!). Hence, the safety factor in the shield designed was lowered from 3 to 2, or 1.2×10^{-4} rem/hr.


SHIELD THICKNESS REQUIRED FOR A DOSE EQUIVALENT RATE OF 1.2×10^{-4} Rem/hr FOR A LINE SOURCE OF 3.76×10^{8} PROTS. Sec^{-1} Cm^{-1} ON Cu.
LINE SOURCE AT 6 ft FROM WALL
(6.2.4.R2)
SHIELD THICKNESS
15
ft
10
5
0
50
100
150
200 MeV
E_p
2ft ORDINARY CONCR. + COMPACTED SOIL
ORDINARY CONCRETE